For the first time in the history of the world, every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death.

Rachel Carson, Silent Spring, 1962

Forum

Family Dollar Values

If Congress approves President Clinton's recent budget proposal, an estimated $50 million dollars could be used to support worldwide family planning services, including abortion.

Upon appropriation of these funds the United States will renew its membership in the United Nations Fund for Population Activities. In 1985, the United States withdrew from the U.N. program to demonstrate the Reagan administration's opposition to abortion. The U.N. Fund for Population Activities does not support "coersive" family planning programs such as China's mandated abortion policy, and Clinton's proposal has made it clear that the United States will ensure that none of its funds are used to support such programs.

The shift in policy from the Reagan and Bush administrations is a signal that the United States will be more active in world population efforts. Population growth and the continued movement of people from rural to urban areas are believed to place enormous stress on the environment in many countries. The effects of population dynamics on the environment were not addressed at the Environmental Summit in Rio de Janeiro, in part out of reluctance to open the United States to criticism for withdrawing from the U.N. Fund for Population Activities.

The United Nations is planning an international conference on population and development to be held in Cairo in 1994. The United States is expected to be a strong and active presence at the meeting.

Radon Prevention Program Hits High Gear

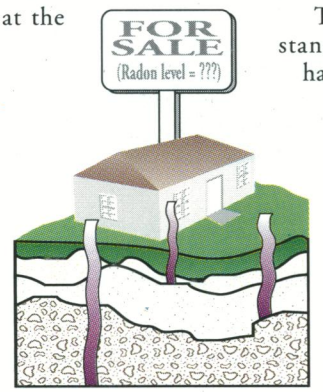
The presence of radon in private homes and its potential for causing lung cancer is certainly not news, but aggressive local, state, and federal efforts to identify and remediate residences with elevated radon levels and to prevent radon contamination are.

The 1986 reauthorization of the Superfund program included an unrelated requirement that EPA initiate a radon research and demonstration program. In addition, EPA has launched a highly effective, state-based radon control program that provides public information, tests households, and gives remediation advice. This nationwide program involves a large number of private and voluntary organizations at the local level, most of which were recruited by state and local health officials.

EPA also helped draft the environmental health prevention objectives for radon exposure reduction in *Healthy People 2000*. One objective calls for the adoption of local construction standards in at least 35 states that minimize radon in new buildings where levels of naturally occurring radon are high. Another objective calls for at least 30 states to require disclosure of elevated levels of radon when buildings are offered for sale. Both objectives are to be met by the year 2000.

On 12 April 1993, EPA published a notice in the *Federal Register* announcing construction standards for preventing radon contamination in 150,000 new homes built each year in areas where geologic surveys have demonstrated high ambient levels of radon.

At the same time, EPA released information on radon in a guidebook targeted to home buyers and sellers. This guidebook has been endorsed by environmental and health officials and by realtors and local governments.



Unwanted houseguest. New EPA program targets radon.

The Agency for Toxic Substances and Disease Registry has published *Case Study in Environmental Medicine on Radon Toxicity*, designed to increase the knowledge of health professionals engaged in primary care about the hazards of radon and to aid in the evaluation of potentially exposed patients. The case study is the 14th in a series of 29 such documents released by the ATSDR.

Frank Lautenberg (D-New Jersey) has introduced a bill to the Senate to reauthorize the 1988 Indoor Radon Abatement Act to assure that federal leadership in radon exposure reduction continues. Joseph Kennedy II (D-Massachusetts) introduced a companion bill in the House. Hearings on the Kennedy bill were held on 24 May 1993. Both proposals would continue current radon research and development and expand the radon prevention programs. The bills would make disclosure of radon levels when real estate is transferred a federal law. The bills would also extend requirements for radon testing and abatement to the workplace.

Results from new epidemiologic studies of radon and lung cancer in the general population are eagerly awaited. These studies should help determine accuracy of the current cancer risk assessment conducted by EPA. The estimate of 7,000 to 30,000 deaths annually from lung cancer is based in large part on studies of workers exposed occupationally to radon. Because these studies looked at miners who were exposed to dusts, fibers, and other possible lung carcinogens, some scientists suggest that the risk is overstated. Most of the current studies attempt to differentiate the contribution of radon alone to the risk of lung cancer from the risk of passive and/or direct exposure to cigarette smoke in residential settings. Whatever the new studies may find, efforts to reduce exposure to radon in homes throughout the United States have become an important part of fighting indoor air pollution.

Here Comes the Sun

Solar cells will almost certainly be a component of electric cars currently being developed by automakers, according to Anthony Catalano, a director at the National Renewable Energy Laboratory in Golden, Colorado. "I think we can see the day when parking lots would be covered with solar cells, and you would plug in while you park," said Catalano.

Catalano was one of the more than 600 solar-energy experts that attended a Photovoltaic Specialists Conference in Louisville, Kentucky, this May. Conference par-

ticipants discussed new developments in solar power and its ecological advantages. Richard J. Schwartz, head of the School of Electrical Engineering at Purdue University and general chairman of the conference, said solar power is already the most economical way of providing electricity for certain applications, especially in remote areas. For example, it is cheaper for a farmer to use solar power to pump water for his cattle than to run electricity from a source 1000 feet away, Schwartz said.

Solar-generated electricity currently costs about 10 times more than electricity generated by coal. However, the recently developed lighter, thinner, more efficient solar panels are much less expensive than the older, bulkier cells, primarily because it takes less material to manufacture them. If an environmental tax, such as the proposed carbon tax, were implemented, solar energy would be even more competitive because there is no cleanup cost.

Morton Prince, a senior scientist with the Department of Energy's photovoltaic energy division, said that the combined output of all solar cells by the year 2000 is projected to equal the daily power needed by a city of 1 million people. Nearly transparent solar panels may one day be used on the facades of buildings, turning them into giant solar generators, Catalano said. Billboards and roadside telephones are already using solar panels to generate their own electricity. With the increasing environmental costs of fossil fuels and rapid technological advances in photovoltaics, the future of solar power looks bright.

Drinking Raises Breast Cancer Risk

Drinking two alcoholic beverages a day raises the estrogen levels in women, leading to greater risk of breast cancer, according to a recent study by researchers at the National Cancer Institute.

"This is the first study to suggest that the mechanism by which alcohol affects breast cancer risk may be the increase in hormones caused by alcohol," said Marsha E. Reichman, one of the researchers who conducted the study.

During the last 10 years, diet and disease research has shown that women who drink moderately have a breast cancer risk 40 to 100% higher than women who do not drink. Other studies have shown an association between breast cancer and estrogen. The NCI study is the first to provide a link between these findings.

In the study, 34 women were tested for the effects of alcohol through six menstrual cycles. For half of the study, one group of women drank 30 grams of pure grain alcohol mixed with orange juice each night. The other group drank only orange juice. During the second half of the study, the groups reversed their alcohol intake. Tests showed that estrogen increased up to 31.9% during the middle and final phases of the menstrual cycle in women who drank alcohol.

(The grain alcohol used in the study was pure [200 proof]. Thirty grams of grain alcohol is approximately equal to the amount of alcohol in two strong martinis.)

Results of the study came just days after Boston researchers reported that three drinks a day may reduce the risk of heart attack by as much as 50%. In the face of such conflicting information, experts say that each woman should consider her lifestyle and individual risk factors such as heredity in deciding whether to modify alcohol intake.

Howard Suzuki

Breakthrough. Scientists are applying biotechnology information to save endangered species.

Biotech for Wildlife

The University of Florida has implemented a program called Biotechnologies for the Ecological, Evolutionary and Conservation Sciences (BEECS) to apply the latest techniques in biotechnology to environmental and wildlife preservation.

"Most biotechnologies—everything from DNA synthesis to protein sequencing—being used today are benefiting agriculture and medicine," said Louis Guilette, Jr., professor of zoology and director of BEECS's reproductive analysis laboratory. "Unfortunately, these methods have not generally been available in ecology, or in conservation biology. The BEECS program is able to bridge that gap."

Endangered and threatened species such as the Florida manatee, panther, and alligator may benefit from the program. Twenty zoos and several environmental organizations are already using BEECS' consulting services to obtain information on topics such as assessing and controlling diseases. Five core BEECS laboratories provide expertise in molecular genetics, reproductive and immunological analysis, molecular biomarkers, and education. The primary purpose of the program is to foster exchange of research findings on endangered wildlife and plants and the diseases and factors that threaten their survival, but researchers have hopes that BEECS will have even wider implications.

"BEECS scientists also hope their studies will shed light on the biologcial effects of global climate change, habitat loss, and other complex issues involving sustainable ecosystems," said Paul Klein, director of the program's immunological analysis laboratory.

Contracts to provide consultative and fee-based services to EPA and National Marine Fisheries have been signed, and proposals are pending with other key organizations.

Big Green Business

Though environmental challenges abound, the atmosphere in corporate America is growing greener. The EPA now uses a business-friendly approach, and environmental responsibility may become a common corporate value.

Such was the consensus at a June 30 conference on Business and the Environ-